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Report to the Chairman and Ranking  
Minority Member, Subcommittee on  
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# MILITARY READINESS

## Full Training Benefits From Army's Combat Training Centers Are Not Being Realized



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The Honorable Herbert H. Bateman  
Chairman  
The Honorable Solomon P. Ortiz  
Ranking Minority Member  
Subcommittee on Military Readiness  
Committee on Armed Services  
House of Representatives

The Army operates three combat training centers: the National Training Center (NTC) at Fort Irwin, California; the Joint Readiness Training Center (JRTC) at Fort Polk, Louisiana; and the Combat Maneuver Training Center (CMTTC) at Hohenfels, Germany. According to Army Regulation 350-50,<sup>1</sup> the Army established the combat training centers for several reasons: (1) to increase unit readiness for deployment and warfighting; (2) to produce bold, innovative leaders through stressful tactical and operational exercises; (3) to embed doctrine throughout the total Army; (4) to provide feedback to Army and joint combined participants; and (5) to provide a data source for lessons learned to improve doctrine, training, leader development, organizations, and materiel focused on soldiers to win in combat. To achieve these purposes, the Army spends about \$1 billion a year to provide training at these centers.

In view of the importance of such training to the Army's readiness and in response to your request, we reviewed the training provided to active Army units at these centers. Our objectives were to determine (1) whether units training at the centers are adequately prepared for the exercises, (2) whether training exercises are realistic in terms of expected battlefield conditions, (3) whether pre-positioned equipment adequately supports the training mission, (4) how units use lessons learned at the centers, and (5) how the Army uses the results of the exercises to help revise training and improve the Army's training doctrine.

In addition to visiting all three centers, we also surveyed all commanders at the 123 active-duty battalions that trained at one of the centers during fiscal

<sup>1</sup>This regulation, dated May 25, 1995, establishes policy, procedures, and responsibilities for Army-wide management of the Combat Training Center Program. It is currently being revised.

year 1998. The responses we obtained provided us with information on home station training prior to deploying to a combat training center (CTC), the usefulness of the exercises, and the ability of units to utilize the training once they returned to home station. On February 26, 1999, we provided the preliminary results of our work during a subcommittee hearing held at Nellis Air Force Base.<sup>2</sup>

## Results in Brief

Although the majority of units that trained at the Army's combat training centers in 1998 favorably assessed their training, neither the Army nor individual units are achieving the full benefits of this training. This is because (1) many units are arriving ill prepared for the exercises, (2) training is not as realistic as it could be, (3) the condition and age of pre-positioned equipment has adversely affected training at two centers, and (4) neither individual units nor the Army itself is able to effectively capitalize on lessons learned from the centers' exercises.

Personnel shortages, turnover, and high operating tempo have adversely affected units' ability to prepare for their rotations to the centers, and as a result, units are arriving ill prepared to engage in the exercises. Although units should be proficient at battalion-level tasks when they arrive at the centers, many have trained only to the company level, and their leaders struggle with the more complicated planning and synchronization tasks required for the battalion- and brigade-level exercises conducted at the centers. In February 1999, Army Forces Command issued new guidance that requires unit commanders to establish training "gates" at their home stations to gauge whether their units are prepared to move to more complex training levels, including training center exercises. Since the guidance does not address the causes of insufficient preparation—personnel shortages, turnover, and high operating tempo—strict adherence to the guidance may simply serve to exclude some units from valuable training center experiences.

Because units lack proficiency at the battalion level, the centers routinely modify conditions in ways that provide less challenging and thereby less realistic scenarios than might be encountered on a real battlefield. The centers frequently restrict the use of chemical weapons, mines, obstacles, artillery, and tactics, and they do not consistently replicate the conditions

<sup>2</sup>Military Readiness: Full Training Benefits From Army's Combat Training Centers Are Not Being Realized (GAO/T-NSIAD-99-92, Feb. 2, 1999).

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that would be expected on future battlefields—terrorist actions, operations in urban terrain, civilians on the battlefield, and interactions with the media. By limiting conditions and not accurately portraying current and future threats, the training centers undermine realism and limit the value of training exercises.

The poor condition and age of some pre-positioned equipment at the National Training Center and Joint Readiness Training Center further degrade training. At the National Training Center, 15 percent of all tank and fighting vehicle crews on average are excluded from training because their vehicles are broken down; on some days, the number reaches 25 percent. In addition, the older equipment used at both centers differs substantially from the equipment soldiers have trained on at home, and valuable training time is wasted simply becoming familiar with it. As of July 1999, the Army was considering various alternatives to improve pre-positioned equipment at the National Training Center.

Commanders cannot take full advantage of the lessons learned at the centers due to ineffective take-home materials, a lack of training opportunities once they return home, and personnel turnover that prevents them from attending to the identified weaknesses. As a result, units are not able to address weaknesses identified during training center exercises.

Although the centers have collected large amounts of data, the Army has never standardized data collection and therefore cannot combine information to assess trends. Nor has the Army established performance measures or a methodology to periodically assess whether the centers are achieving their objectives. Consequently, the Army cannot take full advantage of its lessons learned and does not know the extent to which center exercises are improving unit and leader proficiency. Establishing such performance measures is consistent with good management principles and is consistent with the Government Performance and Results Act, which calls on all government entities to evaluate the results of their programs through the use of performance measures.

This report makes recommendations to the Secretary of the Army that would permit units to conduct limited independent training at the centers prior to beginning the actual exercises, improve the realism of training, and enable the Army to better capitalize on lessons learned at its centers by establishing performance measures and an assessment plan.

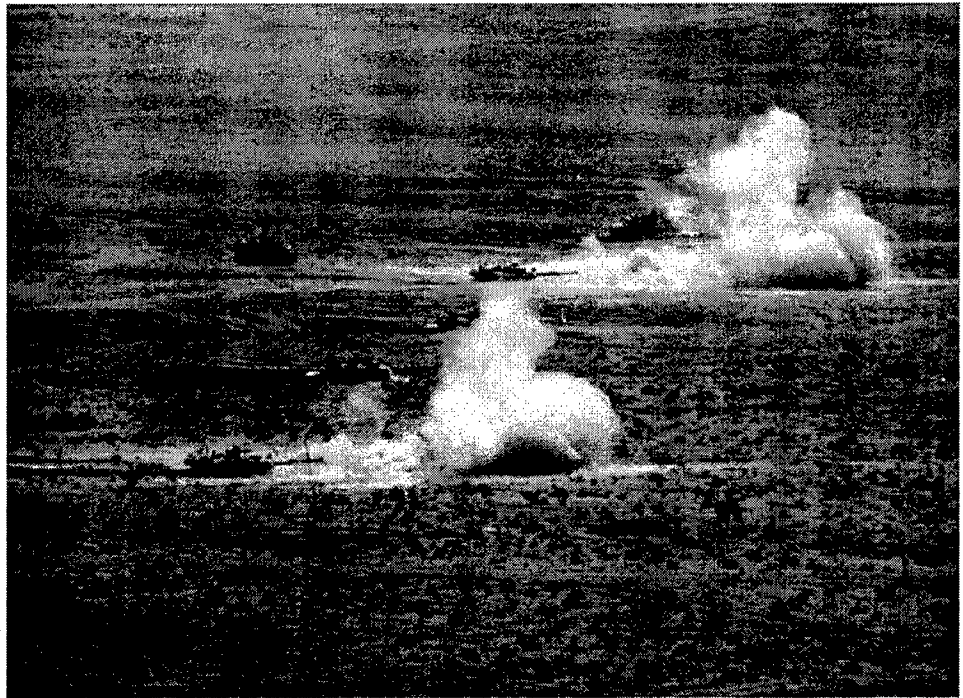
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## Background

To achieve the objectives set out in Army Regulation 350-50, the Army designed the combat training centers to create a realistic training environment, challenge unit leaders with missions against a well-trained opposing force, and provide in-depth analyses of performance to units and their leaders. Combat training center exercises consist of both force-on-force engagements against an opposing force and separate live-fire exercises under conditions that are intended to closely parallel actual warfare. In addition, the regulation indicates that the scope of exercises at the centers should be brigade level or below. Active Army units in the United States train at the National Training Center, Fort Irwin, California, or Joint Readiness Training Center, Fort Polk, Louisiana, about once every 18 months, and those in Europe train at the Combat Maneuver Training Center, Hohenfels, Germany, about every 12 months. Each of the National Guard's enhanced brigades train at the NTC about once every 8 years.

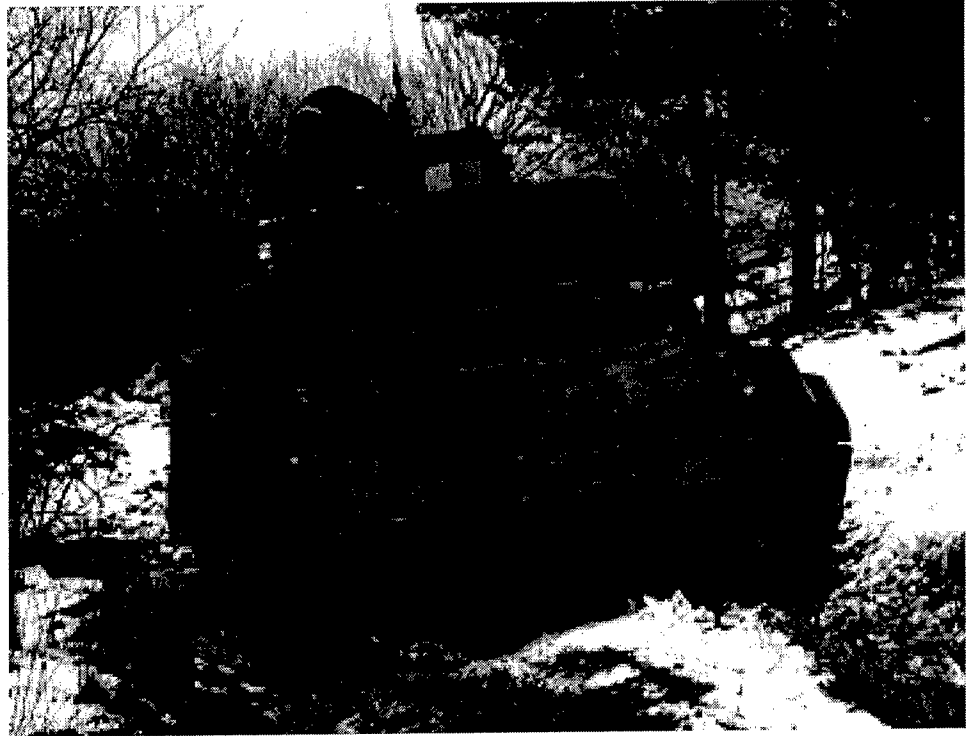
The Army's three combat training centers offer distinctly different training environments. The National Training Center offers an open, mountainous, desert setting that allows several battalions to train simultaneously during force-on-force exercises against the opposing force. The training area at the NTC is roughly the size of Rhode Island. (See fig. 1.)

**Figure 1: Desert Environment at the National Training Center**



The Combat Maneuver Training Center is the only training area available to Army forces in Europe for the conduct of battalion-level exercises. According to center officials, geographical limitations of the center's rolling wooded terrain do not allow brigades to train at doctrinal distances, and two battalions can only train simultaneously with some acknowledged doctrinal degradation. (See fig. 2.)

**Figure 2: Wooded Terrain at the Combat Maneuver Training Center**



The training areas at the Joint Readiness Training Center include swamplands, dense forests, and simulated civilian villages complete with role players, as figure 3 shows.

**Figure 3: Mock Civilian Village at the Joint Readiness Training Center**

The NTC and the CMTC sponsor exercises designed to train armor and mechanized infantry units, such as those from the 1st Armored and 3rd Infantry Divisions, in a high intensity threat environment. The JRTC provides nonmechanized or light forces, such as the 82nd Airborne and the 10th Mountain Divisions, with exercises in a low-to-medium threat environment. Both centers, however, do provide training for task forces made up of heavy and light units operating together. The CMTC and the JRTC also have constructed mock towns for training in urban warfare. Forces from the other military services as well as special operations units are also brought into the exercises at all three centers. Brigades and battalions deploy to these centers with their associated combat service and service support units.

Each center has an active Army battalion or cavalry regiment, consisting of 450 to 2,400 soldiers, permanently stationed there to serve as a dedicated opposing force. These units are organized and specially trained to replicate a hostile force complete with distinctive uniforms, visually modified vehicles, and both U.S. and non-U.S. weapons (see fig. 4).



**Figure 4: Opposing Force Vehicle and Soldier at the National Training Center**



At the NTC and the JRTC, the Army has established pre-positioned stocks of equipment that units draw and use during the exercises. The NTC equipment consists of about 3,800 major pieces of equipment, including tanks, fighting vehicles, artillery pieces, personnel carriers, recovery vehicles, and various types of wheeled vehicles. Generally, units training at the NTC ship their wheeled vehicles and unique equipment items to the center, and they draw their tracked vehicles from the pre-positioned stocks. The pre-positioned equipment at the JRTC consists of about 1,100 major pieces of equipment, mainly wheeled vehicles. Units ship their tracked vehicles to this center for training. The CMTC does not have a pre-positioned stock of equipment.

To add realism to the exercises and provide a real-time assessment of casualties, force-on-force exercises are conducted using the Multiple Integrated Laser Engagement System. This system, carried on both equipment and troops, lets both soldiers and units know immediately if a kill or near kill is scored. Separate live-fire exercises at the NTC and CMTC (at nearby Grafenwohr) are conducted against sophisticated target arrays and involve armor, infantry, artillery, and air elements. At the JRTC, live-fire exercises involve operations in urban terrain as well as combined arms exercises. The JRTC and the CMTC also conduct mission rehearsal

exercise's<sup>3</sup> for units deploying to Bosnia and other contingency operations. All of the centers also have a cadre of experienced officers and noncommissioned officers who serve as exercise observers and controllers. In this capacity, they are responsible for coaching, mentoring, and evaluating training units at all levels of organization. The centers also provide unit leader training programs for the units prior to their deployment to the centers.

The NTC and the JRTC are the joint responsibility of two Army commands in the United States: the U.S. Army Forces Command and the U.S. Army Training and Doctrine Command. In Europe, the 7th Army Training Command is the parent organization for the CMTC.

## Many Units Are Not Adequately Prepared for Training

Many units arriving at the training centers cannot take full advantage of training opportunities because they lack the requisite skills to effectively execute brigade- or battalion-level missions,<sup>4</sup> which is the level of training that the centers are designed to provide. Over 50 percent of our survey's respondents cited personnel shortages, personnel turnover, or high operating tempo as one of their top three reasons for being ill prepared for their training experiences. (Other factors reported as adversely affecting training are shown in app. I.) The Army Forces Command recently initiated actions to establish training gates to certify a unit's readiness for training center exercises.

## Decreased Readiness for Battalion-level Training

Senior-level officials at all three training centers acknowledged the units' lack of preparedness for the training. They told us that many units arriving for training now are substantially less prepared than in the past. The commanders of the opposing forces that we talked to said they had observed a marked decline in unit proficiency. For example, the opposing force commander from the National Training Center, during congressional hearings in February 1999, said that the proficiency level of units arriving at the National Training Center is much lower now than in the past. He

<sup>3</sup>Mission rehearsal exercises are designed to train units to conduct peacekeeping operations by replicating the operational environment where they will be deployed and providing realistic training scenarios.

<sup>4</sup>A division is divided into brigades, its brigades into battalions, its battalions into companies, and companies into platoons, and platoons into squads. For a unit to operate proficiently at the next level, it needs to have developed proficiency at the level below.

believes that commanders, staffs, and soldiers at every level—platoon to brigade—display a decreasing level of knowledge, skill, and ability to plan, conduct, and sustain combat operations. He also told us that, in his opinion, training at the NTC would be improved if the training focus were changed from the brigade to battalion level. Accompanied by the NTC's Opposing Force (OPFOR) Commander, we observed some of these inadequacies ourselves as one training unit conducting a "deliberate attack" quickly shifted to a "movement to contact" soon after the exercise began. The OPFOR Commander pointed out that (1) the training unit's commander demonstrated no effective command and control over his unit and had no reconnaissance plan and (2) his unit had no plan to breach obstacles constructed by the OPFOR. He added that this unit was typical of most units training at the NTC today. Responses to our questionnaire from units that trained at a combat training center in fiscal year 1998 confirmed this perception. Nearly half of the 96 respondents (47 percent) said their unit was only somewhat or marginally ready to execute battalion-level tasks at the training center.

According to Army Forces Command documents, during the late 1980s and early 1990s, units reporting to the centers had to undergo an external evaluation to certify that they were ready for training. Regulations required units to be trained at the battalion level at their home station, and the training centers provided the next level of proficiency that could not be achieved at home station. In March 1998, the Army dropped the prerequisites that units train at the battalion level at their home station and be certified as trained before undertaking NTC exercises. According to training center officials, this change was in recognition of the fact that many units were simply unable to meet these requirements due to personnel shortages and high operating tempo. According to Forces Command Regulation 350-50-2, battalions participating in force-on-force training at the JRTC should have completed train-up exercises from platoon through battalion level within 6 months of going to the center, but this requirement is not enforced for the same reason. The CMTC only requires units to arrive with trained platoons rather than trained companies or battalions in recognition of home station training constraints. In addition, unlike the other centers that conduct battalion- and brigade-level exercises during the entire training rotation, the CMTC provides units with exercises that start at the platoon level and build toward battalion-level exercises.

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## Factors That Adversely Affect Training

Units responding to our survey identified personnel shortages, high personnel turnover, and high operating tempo as the three primary reasons they were unable to adequately prepare for their training rotations to the combat training centers.

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## Personnel Shortages

Personnel shortages affect training at the centers by limiting the options commanders have to execute missions. Personnel shortages have many causes.<sup>5</sup> These include (1) Army-wide shortages of certain specialties and personnel at specific levels, such as combat troops, technical specialists, experienced officers, and noncommissioned officers; (2) personnel transferred to fill vacancies in deploying units; and (3) personnel temporarily borrowed from their units to meet other Army or installation requirements. As of April 30, 1999, the Army reported an on-board strength of about 469,000, which is 11,000 below its authorized strength of 480,000. The current on-board number is also about 10,000 less than the on-board number from a year ago at this time.

Some shortages are quite pronounced. For example, for fiscal year 1998, the infantry battalions that trained at the JRTC on average arrived with only 42 of their 54 authorized rifle squads. Many of these consisted of six soldiers on average rather than the nine authorized. In other words, units arrived with only about half of the personnel authorized for their rifle squads. In recent testimony, the commanding general of the Seventh Army Training Command stated that over the past 18 months, personnel shortages caused units to deploy to the CMTC without fully manned infantry squads and tanks. He cited that dismounted infantry strength averaged 64 percent, ranging from 30 percent to 100 percent, and that only 80 percent of the tanks had the required number of personnel.

Results from our survey confirmed the units' problems with personnel shortages. For example, 10 of the 13 units that trained at the CMTC in fiscal year 1998 and responded to our questionnaire said that a shortage of personnel at the company and platoon level was one of the three factors that had the most negative impact on training. According to the Commanding General of the Joint Readiness Training Center, insufficient staffing is the single biggest factor adversely affecting training. He noted that units that arrive at the center under strength cannot effectively train or

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<sup>5</sup>Military Readiness: Observations on Personnel Readiness in Later Deploying Army Divisions (GAO/TNSIAD-98-126, Mar. 20, 1998).

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maximize their training experience. Of the 36 units that trained at the JRTC in fiscal year 1998 and responded to our questionnaire, 18 said that a shortage of personnel was one of the primary factors that negatively affected battalion-level training for the exercises. Written comments provided by units responding to our survey were also revealing, as shown in the following examples:

"At the time of the rotation, I could only man 18 of the 24 Blackhawks in my battalion. Personnel shortages in both aircrews and senior NCO's adversely affected the training during our rotation."

"The impact of personnel shortages is obvious when examined against the requirements of an Infantry Company and platoon. The battalion was short one line platoon per company. We were given approximately two weeks prior to deployment to integrate a platoon from a sister battalion. The lack of key leaders in the 11-20 [infantry-sergeant] series had a negative impact on company commanders' and platoon leaders' ability to conduct effective training."

"Prior to NTC, personnel statistics [overall level of manning] were 85 percent. Shortages at the platoon level leadership impacted on small unit proficiency/effectiveness. Unit maintained two rifle platoons instead of the TOE [authorized] three platoons."

"The battalion went to the NTC at 80 percent fill and 20 percent of the personnel were new."

"We were not plussed up [augmented from other units] to attend our CTC training. My company-sized units were authorized 70 soldiers but deployed with only 55."

"The battalion borrowed 16 tank crews from other units to field enough tanks to fight at the NTC. Also [the unit] went into platoon/company training with only 2 of 14 tank drivers trained to properly operate their vehicles."

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## Personnel Turnover

Personnel turnover also hampers units preparing for their rotations to the training centers. Of the 96 units that responded to our survey, 49 said that turnover had the most negative impact on battalion-level training at home station, and 54 said that turnover had the most negative impact at the company and platoon levels (see app. I).

More than half of the respondents to our questionnaire said that personnel turnover had a negative impact on company- and battalion-level training. Many told us that personnel turnover requires them to teach basic tasks more often, which reduces the time available to develop proficiency at higher levels. Some of the specific comments provided included the following:

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"High personnel turnover coupled with a shortage of Non-Commissioned Officers degraded the battalions' ability to train and sustain readiness levels. New soldiers entering the battalion may not have a first line supervisor to train them."

"120 days before going to the NTC, the battalion had massive personnel turnover. Examples: 39 percent turnover of warrant officers, 33 percent turnover of crew chiefs, 54 percent turnover of armament repairers. We went to the NTC with troops that had no home station training with the unit."

"Personnel turnover at the mid grade and senior level NCO [levels] doesn't allow the unit to build a solid base. Assignments to Recruiting Command, AC/RC, [active personnel supporting reserve component units] Korea and U.S. Army Europe (USAREUR), they all continue to eat away from your NCO experience within the battalion. The continuous drain of NCOs from the battalion after a CTC rotation decreases readiness and unit cohesion."

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## High Operating Tempo

The Department of Defense's (DOD) October-December 1998 Quarterly Readiness Report highlighted high operating tempo (OPTEMPO) as a key factor that has stressed today's Army. It noted that force size had decreased 34 percent since the end of the Cold War, while missions had increased 300 percent. As of mid-February 1999, brigades or task forces from all but 3 of the Army's 10 divisions were either committed to certain parts of the world or were preparing for or recovering from contingency operations. In addition, in June 1999, elements of another division (the 82nd Airborne Division) were committed to operations in Kosovo. The Army's contribution to the international security force in Kosovo, in addition to existing commitments in Bosnia and elsewhere, are likely to further degrade training at home stations. Units in Europe will be especially affected since the 1st Infantry Division in Germany has been tasked to provide the majority of the Army's contribution to that effort.

The increase in operations other than war (OOTW) since 1991 has significantly affected the ability of U.S. military forces to prepare and continue to be ready for expected wartime missions. As we reported in May 1999,<sup>6</sup> OOTW has affected the combat capability of the military services, especially Army units because they generally require more recovery time. While the primary mission of combat units is the destruction of enemy forces, OOTW primarily focus on peacekeeping tasks such as conducting presence patrols, inspecting weapons storage sites, and establishing checkpoints. Because units do not conduct armored

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<sup>6</sup>Military Operations: Impact of Operations Other Than War on the Services Varies (GAO/NSIAD-99-69, May 24, 1999).

maneuver operations and are relieved from gunnery qualification requirements while engaged in OOTW, the skills of individual personnel as well as entire units decline. For example, units from the 1st Infantry and 1st Armored Divisions located in Germany were unable to train on many mission-essential tasks at the company- or battalion-levels during repeated deployments to Bosnia. Therefore, officials at the Combat Maneuver Training Center adjusted their training model for units from these divisions to reflect a decreased skill level in units. Several days were set aside at the beginning of training for the units to conduct uninterrupted training at the company level to refine skills prior to beginning exercises against the opposing force. Unit and center officials told us that this time spent at the beginning of the rotation paid great dividends during the remainder of the training exercises because they were better prepared to fully participate.

Of the 96 units who responded to our questionnaire, 48 said that OPTEMPO had a significant negative effect on training at the company and platoon levels at home stations. The following are representative of the comments provided by many of the respondents:

"High OPTEMPO and personnel tempo virtually eliminate any opportunity to conduct meaningful collective training or develop strategies for correcting deficiencies."

"There is too much on everyone's agenda. As soon as we returned from JRTC, [I] sent 3 companies to Southwest Asia and 1 company to Haiti."

"[It is] difficult to conduct battalion-level training while [the] unit is being asked to provide people and equipment to support multiple brigade and above taskings."

"High OPTEMPO severely limits the battalion's collective training opportunity. You simply move from one 'big event' to the next without chance to pause, evaluate, [or] develop [a] strategy to correct deficiencies."

Since February 1999, when we reported our preliminary findings at a congressional hearing, the Army has taken steps to address the preparedness of units for combat training center exercises and the adequacy of equipment used during the exercises.

## Training Gates Established to Certify Units' Readiness to Train at Higher Levels

On February 26, 1999, the Commanding General of Army Forces Command issued new training guidance to all unit commanders. This guidance, which is expected to be fully implemented by the end of fiscal year 2000, requires all unit commanders to establish clearly defined objective criteria to serve as "gates" during home station training for determining whether their unit

is prepared to move to a more complex training level. The guidance requires units to develop a certification program that includes an assessment of whether units, staffs, and leaders are prepared for the next higher level of training. Unit assessments will be made using the training tasks, training conditions, and performance standards contained in the Army Training and Evaluation Program guidance that the U.S. Army Training and Doctrine Command (TRADOC) has developed for each type of Army unit.

The guidance also established home station training gates for units preparing to conduct combat training center exercises. For example, active units must complete an externally evaluated battalion task force maneuver exercise, a company and task force fire coordination exercise to synchronize both direct and indirect fire weapon systems, platoon-level gunnery exercises, and a certification that unit staffs are proficient in making tactical decisions. According to the guidance, battalions that do not demonstrate proficiency through the formal external evaluation process must be retrained and demonstrate proficiency before going to a training center.

Army Forces Command officials expect the gate strategy to have a positive effect on training by identifying unit shortfalls and requiring units to develop basic proficiency foundations before progressing to more complex training. The guidance issued by Forces Command, however, does not address how commanders might overcome the factors that they told us had the most negative impact on developing proficiency at home stations: that is, personnel shortages, personnel turnover, and operating tempo. These factors are not likely to dissipate, and they will make it difficult for commanders to achieve the goals of this new initiative. Under this training strategy, it is possible that some units might be precluded from a combat training center experience if they are unable to demonstrate the required proficiency. Also, there is an additional consequence of this strategy in that the OPTEMPO for leaders of the units not going to the CTCs will increase, because the external evaluators must come from units not preparing for CTC exercises.



## Training Conditions Are Routinely Limited and Current Threat Not Always Portrayed

According to Army Regulation 350-50, training at the combat training centers is designed to increase a units' proficiency by replicating the most realistic and challenging battlefield available. However, because units are arriving at the centers with lower levels of proficiency than in the past, the training centers now routinely adjust training conditions to compensate for the degradation. The centers routinely limit the capability of their opposing force by restricting its use of chemical weapons, mines, obstacles, artillery, and tactics. The following examples illustrate these limits:

- A ceiling is placed on the numbers, types, and times that the opposing force can use chemical weapons and mines. As a result, units that initially demonstrate a low level of training in chemical environment operations or breaching mine obstacles will face fewer of these events.
- A ceiling is also imposed on the numbers, types, and time of employment for artillery. The opposing force commander must obtain permission to use additional artillery above this ceiling from center officials, who determine whether the additional artillery fires will detract from the training objectives.
- Opposing force reconnaissance elements are now limited to destroying a specific number of friendly vehicles with artillery at night. This limit is imposed to ensure that training units have sufficient forces to commence their mission in the morning.

Officials at the centers emphasized that providing scenarios with the most challenging conditions versus limiting the conditions to better match unit capabilities involves trade-offs. On the one hand, it makes sense to limit exercise complexity so units can accomplish some training objectives. However, on the other hand, without exposure to the full spectrum of threat that units will almost certainly face, units may not be adequately prepared to face the most demanding threats. Moreover, as one Army official told us, many commanders come away from their training with an unrealistically high assessment of their individual and unit capabilities because they leave the centers thinking that their units performed well, when serious unit weaknesses might have been uncovered had training conditions not been adjusted to reduce exercise complexity.

In addition to a less challenging battlefield, the NTC and the CMTC, for the most part, are still using a 1970s Soviet threat model to replicate specific enemy capabilities. In the future, however, DOD officials believe that U.S. forces will most likely face a different type of threat, one whose systems

are not fully known in advance of conflict and one that will require new approaches to defeat. They also believe that operations in urban settings, terrorist activities, and civilians on the battlefield will typify future threats and conditions. Past operations in Somalia, Bosnia, Haiti, and more recently the situation in Kosovo show that the Army's mechanized and nonmechanized forces may need to be prepared to conduct their traditional missions (attack, defend, and movement to contact) in urban settings where civilians are present and concerns about collateral damage are real. Moreover, these operations have shown the importance of knowing how to effectively deal with local foreign officials and the media. These conditions, however, are not realistically portrayed at all the combat training centers. Table 1, which summarizes our observations and data provided by officials at the centers, shows that the Joint Readiness Training Center has done the most to incorporate expected conditions into its exercises, while the National Training Center has done the least.

**Table 1: Comparison of Training Features at the Army's Combat Training Centers**

	National Training Center	Joint Readiness Training Center	Combat Maneuver Training Center
Operations in urban terrain	No	Yes	Limited to dismounted infantry
Terrorist activities	Usually limited to security tests	Yes	No
Civilians on the battlefield	Usually confined to one roadblock	Yes	Based on unit proficiency
Dealings with local officials	Only before exercises begin	Yes	Based on unit proficiency
Media on the battlefield	Only before exercises begin	Yes	Based on unit proficiency

Source: Developed by GAO from data provided by CTC officials.

Officials from all the training centers told us that the JRTC more completely portrays the complex environment that units and leaders operate in today because it was established to train Special Operations Forces and light forces that in the past were tasked to address these types of complexities. In contrast, armored units training at the NTC and CMTC have been tasked primarily with planning, developing, and maintaining the capability to conduct open-area maneuver warfare. According to the Commanding General of the NTC, however, this is not the case today because Operation Desert Storm showed potential enemies that they cannot win on open ground against U.S. forces. Consequently, in his view, future conflicts will draw all types of forces into cities and urban areas where the enemy can mix with the general population. The Army's Forces Command is studying how to sustain the training relevancy of the combat

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training centers, and it plans to change the opposing force tactics and training scenarios at all centers by the end of the first quarter in fiscal year 2001 to make them more relevant to threats and mission requirements expected in the next 10 to 15 years. We are currently reviewing the services' efforts to train their personnel in urban warfare in more detail, and expect to issue our report in early 2000.

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## Maintenance Problems and Aging Equipment Limit Training

Pre-positioned equipment at the NTC and JRTC does not adequately support the centers' training mission. A high rate of use at the NTC makes equipment maintenance a challenge, and, despite additional funding from the Congress, many tank and fighting vehicle crews are excluded from training because their vehicles are broken down. In addition, the majority of units training at both the NTC and JRTC lose valuable training time as they learn to operate equipment that is much older than the equipment they use and maintain at home stations. The Army has no pre-positioned equipment at the CMTC.

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## Maintenance Problems

The equipment pre-positioned at the NTC is driven three to five times as many miles each year as any unit's home station equipment, according to the NTC commander. Each tank and fighting vehicle at the NTC is run about 3,000 miles per year. Such usage, compounded by the rugged terrain, heat, and sand at the NTC, creates a significant maintenance challenge for center officials.

To meet this challenge, the center uses a combination of contractor services and Army personnel for maintaining equipment. The contractor is responsible for servicing the equipment, and two Army direct support companies and one general support company stationed at the center make repairs.<sup>7</sup> According to Forces Command Regulation 350-50-1, paragraph 3-5a, the NTC also maintains two brigade sets of equipment designed to ensure equipment issued to a training unit is operationally ready. Despite these efforts, the Army Inspector General and Army Forces Command separately reported the typical unit begins training with only 85 percent to 90 percent of needed vehicles rated as fully mission capable (FMC) due to maintenance backlogs. Equipment rated as FMC does not necessarily meet

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<sup>7</sup>A direct support company repairs equipment by replacing parts. A general support company repairs equipment by rebuilding major component assemblies.

the Army's equipment maintenance standards.<sup>8</sup> Moreover, because of the extensive use of the vehicles (over 300 miles per rotation) and repair parts shortages, the number of vehicles that are mission capable rapidly decreases to 65 percent to 75 percent over the course of the rotation, according to the NTC commander. He also has acknowledged that on average, 15 percent of all tank and fighting vehicle crews miss training each day because their equipment needs repair.

Units responding to our survey provided written comments that highlight their concerns related to the pre-positioned equipment at the centers. For example,

"The equipment available for draw at the NTC is in horrible condition. Soldiers should not have to draw broken equipment that requires several days or even weeks to repair."

"Extreme waste and abuse. Equipment issued in unsafe condition. The draw and turn in took longer than the actual days in training."

"Our battalion's poor maintenance posture during the rotation adversely impacted our overall training experience as a battalion. Over one third of our soldiers spent the majority of the rotation in the UMCP [Unified Maintenance Control Point] because of broken equipment. During the draw, over one half of the M1s [tanks] [and] M2s [fighting vehicles] that we drew were deadlined (inoperable due to needed repairs)."

Over the past 2 years, the Congress has provided the Army \$120 million in additional funding for the operation and maintenance of the pre-positioned equipment at the NTC. According to Army Headquarters officials, these funds were programmed for the maintenance and upgrade of NTC equipment and were to be used for repair parts, depot-level repairs, and supplies and services. Despite this additional funding, the maintenance problems at the NTC have become so acute that training units must send some of their own maintenance personnel to the center 2 weeks prior to training to repair broken equipment for issue.

The NTC's June 1999 update to its strategic plan, which sets forth its mission and business goals and assesses performance toward these goals, also confirms a continuing problem with pre-positioned equipment. The

<sup>8</sup>FMC is defined in the glossary of Army Regulation 220-1, Unit Status Reporting, as equipment that can perform all of its missions without endangering the lives of the crew and operators. Equipment can be rated as FMC and have inoperable systems that degrade its mission flexibility and usefulness. For example, an M1A1/A2 tank can be FMC with the driver's night sight, and commander's independent thermal viewer all inoperable.

center's mission capable rate goal for its tracked vehicle fleet is 90 percent. However, the actual monthly mission capable rate for these vehicles ranged from 65 percent to 80 percent the first 6 months of fiscal year 1999. In response to these rates, the center's strategic plan states that the consistent performance below the 90-percent goal is primarily due to the poor condition of the fleet.

### **Aging Pre-positioned Equipment at the NTC and JRTC Lessens the Training Benefit**

The commanders of the NTC and JRTC have also expressed concern about the age of their pre-positioned equipment. At the Joint Readiness Training Center, units are using 30-year-old, 2½-ton, and early model 5-ton trucks with manual transmissions, while at home stations, units operate 5-ton trucks with automatic transmissions. At the NTC, the situation is similar. Pre-positioned tanks at the NTC are all first-generation M1-A1 models and the Bradley Fighting Vehicles are all first-generation M2-A1 models. However, at home stations, the Army units have second- and third-generation tanks and third- and fourth-generation fighting vehicles. Our comparison of serial numbers on the fighting vehicles at the NTC with Army inventory records shows that some vehicles came off the assembly line in 1981, the first year they were produced, and that the average age of all the NTC's fighting vehicles is 13 years. Army Forces Command data show about a 40-percent commonality between the equipment training units have at home station and what they draw from NTC pre-positioned stocks.

Requiring units to use older equipment with different capabilities creates (1) safety problems because soldiers are not familiar with fire control systems and switch locations, (2) performance degradation because target identification and designation systems are different, and (3) maintenance problems because older vehicles do not have built-in diagnostic systems. As a result, the centers are obliged to devote training time to teaching soldiers how to operate obsolete equipment, which is "a waste of valuable time and resources," according to the JRTC commander. In addition, maintenance personnel have to maintain and repair equipment that is different than that owned by the unit and for which they have been trained, which degrades the usefulness of the training for them.

### **Army Study Reviews Alternatives to Improve Equipment**

The Department of the Army Headquarters is currently reviewing the results of the Army Forces Command's January 1999 study of options available for providing the equipment needed for training at the NTC. The study concluded that the current system of pre-positioning tracked and

wheel vehicles was ineffective because of the significant difference between the equipment at the center compared to the equipment units trained on at home stations. Although there are several different models of each type of vehicle assigned to the operational units, even the least modernized unit does not have some of the older equipment models pre-positioned at the NTC. This difference between training center and home station equipment, according to the study, significantly impedes training since crews have to be retrained to use and maintain older equipment.

The study examined three alternatives for meeting the equipment needs of units at the NTC. The first alternative, the modernization of the equipment at the center, was discounted because (1) \$976 million would be required to modernize the tracked vehicles, (2) maintenance costs at the centers would increase, and (3) a large number of personnel would be needed to support equipment issue and turn-in. The second alternative, requiring units to ship all needed equipment to the center, was discounted because of the transportation costs to the training units. The alternative recommended by the study is to (1) modernize the wheeled vehicles at the center and (2) require the units to ship their tracked vehicles to the center at an estimated cost of \$222 million through fiscal year 2009. This alternative, according to the study, would avoid the cost of modernizing the tracked vehicles, allow a reduction in contract maintenance costs of an estimated \$104 million annually, and eliminate the necessity of training units on older equipment. The Army had not made a decision on whether to accept the recommended alternative as of July 1999.

## Exercise Results Are Not Routinely Used to Improve Proficiency

According to the Army's training center regulation, take-home packages are provided to each unit to document all of its after action reviews, describe performance strengths and weaknesses, and recommend a focus for home station training. However, we found that ineffective take-home packages and a lack of training opportunities at their home stations diminish the value of units' training experiences at the centers. Consequently, systemic weaknesses demonstrated by units during training center exercises are not being addressed.

Responses to our survey indicate that 30 percent of the commanders felt that take-home packages were marginally useful or not useful. Another 35 percent believed the take-home packages to be somewhat useful. Several commanders described their packages as worthless because they were written in generic language and lacked specificity. One commander

noted that the package arrived a full 3 months after the rotation ended; another noted that he had not received any feedback or materials from his unit's rotation to the training center. A third described the take-home materials as an afterthought, built around the shortcomings of people, not systems. Finally, one seemed surprised at his package, noting that its content did not seem to match the comments provided at the after-action reviews provided during the exercise.

Commanders also cited limited training opportunities when they return to home station as inhibiting units from using training center results to improve their skills. Most units begin a support and recovery cycle<sup>9</sup> immediately following training center exercises and at the same time begin to lose many of the people who participated in the exercise. Forty-two percent of the units who responded to our questionnaire said training center exercises were only marginally useful or not useful at all after only 3 months. Only 22 percent of the commanders said their units had been able to maintain unit strengths at the company level and train on weaknesses after returning to home station. Moreover, 26 percent and 27 percent, respectively, said their units had been able to conduct only a minimum amount of training at the company or battalion levels.

Another reason for the limited usefulness of exercise results is the significant personnel turnover that occurs in units following training center exercises. One commander at Fort Hood, for example, said that personnel turnover had left the battalion mostly untrained within 30 days of its return from the NTC. His unit lost 16 tank crews that it had borrowed from other units for the exercise, 14 platoon leaders had changed jobs, and 4 company executive officers and 10 platoon leaders also left the unit. As result, the unit that was left to put its lessons learned to use was far different from the one that trained at the center. Table 2 summarizes the percent of key leaders lost by units within 90 days after training at a center in fiscal year 1998, as reported to us by unit commanders who responded to our questionnaire.

<sup>9</sup>A support and recovery cycle is a period of time after a major exercise during which units, for example, provide leave for personnel, repair and clean equipment, or order new spare parts.

**Table 2: Key Leaders Lost Within 90 Days in Units That Trained at the Combat Training Centers (fiscal year 1998)**

Key leader	Percent of units that lost this leader
Battalion commander	21
Battalion executive officer	55
Battalion personnel officer (S-1)	53
Battalion intelligence officer (S-2)	56
Battalion operations officer (S-3)	57
Battalion maintenance officer (S-4)	53

Note: Based on responses from 96 units.

Source: Developed by GAO from questionnaire responses.

When information provided by commanders on personnel turnover and training accomplished by the units 90 days following training center exercises is compared with the readiness reported by the units for the same 90-day period, a significant disparity is revealed. The formal readiness assessments submitted<sup>10</sup> do not reflect the lack of opportunity to train on weaknesses identified during the exercises or the rapid loss of experienced leaders following the training. As a result many units reported very high levels of readiness for months after their training center exercises even though serious training shortcomings identified at the centers had not been corrected and the majority of senior unit leaders had been lost due to personnel turnover. Fifty-four of the 96 battalions that returned our survey reported the same or a higher level of overall readiness, personnel readiness, and training readiness, even though 95 percent reported a significant loss of key personnel during the first 90 days after the training center exercises and 76 percent of the commanders reported being unable to work on all weaknesses identified at the center.

<sup>10</sup>Under the Status of Resources and Training System (SORTS) to the Joint Chiefs of Staff.



## Assessment Plan Needed to Better Integrate Lessons Learned Into Army Training and Doctrine

The Army has not implemented a plan for adequately assessing training results for the purpose of integrating them with the Army's training and doctrine development activities. Consequently, the Army is not effectively capitalizing on the lessons that it learns from its training centers. Specifically, improvements to training and doctrine are hampered by a lack of standardized data to assess trends and performance measures to evaluate the effectiveness of the centers in meeting their objectives.

## Centers Lack Standardized Data

The Army has gathered large amounts of data at its combat training centers for more than 15 years. However, despite being one of the Army's key objectives for establishing the centers, past data collection efforts have not consistently been used to improve Army training and doctrine. Because it has not standardized data collection programs at its centers, information from the centers cannot be combined to assess trends. Moreover, each center has a different contractor for data collection and each uses its own proprietary computer software. The cumulative effect is that much of the information collected cannot be used by the Army's Combined Arms Center (CAC) to develop lessons learned from the exercises. For example, one study conducted by the Army Center for Lessons Learned (CALL)<sup>11</sup> revealed that 90 percent of the instrumentation data collected at the CTCs is not sent to CALL to be archived. However, even if the data were sent to CALL, it does not have the capability to read the data.

The problems with data collection and analysis at the Army's training centers have existed for a long time. In July 1986, we reported that the Army had not adequately defined its analysis needs and corresponding data requirements, nor developed criteria for performance measurement.<sup>12</sup> We concluded that the Army had spent millions of dollars collecting information that it was reluctant to rely on for developing Army-wide lessons. Today, the situation is not fundamentally different.

In 1995, CAC developed a plan for collecting, analyzing, archiving, and disseminating combat training center data. During the period January through June 1995, CAC, with contractor assistance, identified the data

<sup>11</sup>The Center for Lessons Learned, a component of the Army's Combined Arms Center, collects, analyzes, and disseminates lessons learned from training and actual operations to the total Army via written reports and an electronic database.

<sup>12</sup>Army Training: National Training Center's Potential Has Not Been Realized (GAO/NSIAD-86-130, July 23, 1986).

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needs of the centers, Army schools and doctrine proponents, and unit leaders. The ability of data collection systems to meet these needs was then assessed. The study group concluded that the data being collected did not support the needs of most users outside the centers, and CAC developed a master plan to meet the requirements. The in-depth plan provided the framework for on-site teams of 10 personnel to collect and collate data at each center from units, training center observer-controllers, and the existing instrumentation systems. However, the Army's Training and Doctrine Command decided not to fund the program. The estimated cost to implement this plan was about \$2 million. Consequently, the data collected today is essentially the same as was collected in 1995, and a plan for implementing data collection methods to meet Army needs and fulfill one of the objectives for establishing the centers has still not been implemented.

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## Centers Lack Performance Measures

An even more fundamental weakness is that the Army has no standard performance measures to gauge how well the centers are carrying out their assigned responsibilities nor has it conducted an assessment of the center's effectiveness either individually or collectively. A set of measures would provide a set of benchmarks that the Army could use to better focus the training conducted at these centers and better gauge whether training at the centers is improving the readiness of the Army's units to fight in these larger formations. Establishing such performance measures is a fundamental management principle and is consistent with the Government Performance and Results Act, which calls on all government entities to evaluate the results of their programs through the use of performance measures.

Without such measures, the Army is left to a subjective ad hoc system of measurement. For example, a 1998 review by the Army's Center for Lessons Learned showed that units training at the NTC have continued to make many of the same mistakes since 1994 (see table 3). The Army has not developed a similar analysis for the other centers because the data needed is not available.

Table 3: Examples of Recurring Problems Demonstrated by Units at the NTC Since 1994

Battlefield operating system	Problem area	Examples
Maneuver	Direct fire planning and execution	Company/teams tend to develop a scheme of movement and not a scheme of fire and maneuver. Inadequate fire control within companies results in ineffective placement of fires on the enemy.
	Movement formations and techniques	Forces do not take effective action when in contact with the enemy. Units have problems massing combat power and fight piecemeal.
	Use of dismounted infantry	Battle staffs seldom consider dismounted infantry in planning. Dismounted infantry is not integrated with the scheme of maneuver. Commanders do not specify a clear task and purpose for dismounted infantry.
Fire support	Integration of fire support with maneuver	Commanders do not integrate artillery with maneuver forces, resulting in inadequate support, unclear orders, and confusion. As a result, commanders cannot control or mass all weapons systems.
Command and control	Battle tracking and predictive analysis	Staffs do not give their commanders sufficient information for effective mission analysis. Units do a poor job of reporting information to the tactical operations center.
	Military decision making process	Staffs lack the training required to conduct the military decision-making process to standard. Commanders often dominate the planning process. Commanders too often spend most of their time at the main command post supervising staff.
	Troop leading and discipline	Company/team leaders do not regularly conduct precombat checks or inspections. Small arms weapons are not properly maintained and cleaned. Field sanitation standards are not enforced. Noise and light discipline are not maintained.
Mobility and survivability/ nuclear, biological, chemical	Force protection	When units encounter chemical agents, they do not have a plan to react. Units are generally unprepared to conduct thorough chemical decontamination operations.
	Obstacles coordination and integration	Obstacles are not planned or emplaced to enhance the overall capabilities. Commanders have weak knowledge of obstacle integration procedures. Fratricide incidents are increased because minefield records are incomplete or not forwarded to higher headquarters as required.
	Breaching operations	Units fail to plan deliberate breach operations even when mission analysis clearly indicates that it is appropriate. Fundamentals of breaching operations are not understood or implemented.
Combat service support	Medical support planning and execution	Medical personnel do not see wounded soldiers in a timely manner. The typical died-of-wounds rate is seldom below 50 percent. Casualty evacuation is a serious problem.

Note: The examples shown were identified in the source analysis as continuing through each quarter since 1994.

Source: Analysis of NTC exercise results conducted by the Army's Center for Army Lessons Learned.

In October 1996 TRADOC established a remedial action program (T-RAP) to correct unit deficiencies and improve performance using trend observation to (1) identify recurring problems affecting unit performance, (2) develop and implement comprehensive solutions, and (3) validate that

solutions are implemented. The program has not been very successful because accurate and complete data to use in identifying recurring problems were lacking and the program lacks an enforcement mechanism for implementing changes. According to Army officials, the Army's Combined Arms Center plans nevertheless to re-emphasize the T-RAP program. However, the benefits that could be derived from Army efforts to reverse negative trends through T-RAP cannot be realized until a comprehensive data collection and analysis plan is implemented at the CTCs.

Notwithstanding the fact that 83 percent of our survey's respondents said that the exercises were very useful in enhancing battalion- and company-level proficiency, they also identified aspects of training at the CTCs that they believe should be changed to make the exercises better in preparing units to accomplish assigned missions. Table 4 shows the areas where the commanders believe improvement is needed.

**Table 4: Aspects of Training That Commanders Believe Need to Be Improved**

Training aspects	Total	NTC	JRTC	CMTC
Number of respondents	96	40	41	15
Take home materials for use at home station	27	10	15	2
Equipment draw procedures at the CTC	23	16	5	2
After action reviews	21	9	11	1
Live-fire exercises	20	8	8	4
Deployment from home station to the CTC	11	4	4	3
Force-on-force exercises	10	3	3	4

Source: GAO survey on CTCs.

As shown by the table, a number of respondents felt that their training center experiences could have been enhanced through better take-home packages, improved procedures for drawing pre-positioned equipment, and more effective after action reports. For example, 27 of the 96 respondents believed that improvements could be made in the take-home packages for use at home station.

## Conclusions

The Army is operating training centers that are rightfully the envy of the rest of the world's armies, allied and enemy alike. Collectively, they offer diverse physical environments that provide realistic battlefield conditions

enabling the Army's personnel to experience the closest thing possible to actual combat. Their sophisticated instrumentation and network of trained observers provide unparalleled opportunities to develop leaders and improve the readiness of the Army's units to engage in combat. Over 83 percent of the units responding to our survey believed their training at a combat training center was very useful in enhancing their unit's combat proficiency. However, the objectives the Army established for its combat training centers to increase unit readiness, produce bold leaders, embed doctrine, and provide feedback and a data source for lessons learned are not being fully realized.

Several persistent problems—personnel shortages, turnover, and high operating tempo—have decreased the benefits of training exercises at the combat training centers because they have inhibited units from being fully prepared for the training. The Army's Forces Command has recently taken a first step toward improving unit preparedness for training at the NTC and JRTC by requiring units in the future to be certified as ready for the training. Notwithstanding the benefits of a certification program, the problems related to personnel shortages, turnover, and high operating tempo are likely to continue to adversely affect training at home stations, and the Army has not factored those problems into the certification process.

Optimally, units would be fully resourced and allowed to conduct several months of uninterrupted training in preparation for training center exercises. But, in today's environment, where a smaller force is being used for an increased number of operations, such a situation is not feasible. In recognition of the impact of these factors on home station training programs, one center—the CMTC—has provided units with preparatory training time at the center before exercises begin. Unit commanders and center officials believe this investment has resulted in effective training for the units.

The problems of maintaining pre-positioned equipment and the age of it have also detracted from units training experiences at the NTC and the JRTC. Because of the amount of equipment that is not in service at any given time, units and personnel miss valuable training experiences at the centers that cannot be emulated at home station. The problem of being unfamiliar with equipment also degrades the training experience.

Training conditions at the centers are being made less stringent to compensate for unit shortcomings. As a result, the threats and conditions

that units will certainly face on future battlefields are not routinely portrayed. These threats and conditions such as dealing with terrorists, operations in urban terrain, and civilians on the battlefield are not routinely incorporated into the exercises at each of the centers. By limiting the conditions and not accurately portraying current and future threats, the value of the training provided at these centers is diminished. Moreover, because many of the conditions cannot be replicated at home stations, units and their leaders are being denied the best opportunity to prepare for the demanding conditions of present and future operations.

The Army has not made a commitment to achieving its objective of collecting data at the centers to facilitate Army-wide lessons learned, research, and doctrine development. Until the Army implements a plan to collect the information needed by all organizations and establishes performance measures consistent with the Government Performance and Results Act, one of the most important reasons for establishing and operating the centers will remain unmet.

## Recommendations

We recommend that the Secretary of the Army direct the Commanders of the Army Forces Command, the Army Training and Doctrine Command, and the Seventh Army Training Command to take the following actions to enhance the value of the Army's combat training centers to the Army and to units training at the centers.

- Amend training exercise schedules at the centers so that time is allocated at the beginning of each training rotation for units to conduct a limited amount of internal unit training before the center's observers/controllers and OPFOR begin training with the units. While this might lengthen the total training time by a few days, the gains in unit synchronization and execution skills and the improved familiarization with pre-positioned equipment can be expected to increase the training benefits to units and their leaders.
- In accordance with Army Regulation 350-50, paragraphs 1-5 and 1-6, which stipulates that the centers will use the most realistic and challenging training conditions available, incorporate into the exercises at each combat training center the full spectrum of threats, opposing forces capabilities, and conditions that units are likely to encounter in future conflicts, especially ones that cannot be easily duplicated at home stations. Specific emphasis should be afforded to operations in urban terrain, dealing with terrorists, operations with military forces

from other countries, and activities involving civilians on the battlefield and interactions with the media.

- Develop and implement a comprehensive data requirements and collection plan to enable center officials to systematically collect data that can be used to improve training and doctrine. This plan should include (1) an approach for linking the centers by using compatible computer software so that Army-wide assessments can be made, (2) performance measures and the methodology to be used to periodically assess whether the centers are meeting their objectives, and (3) the specific information needed by research organizations, training and doctrine development commands, the centers, and units. The data collection plan developed by the Army Combined Arms Center in 1995 would serve as a good basis for developing a current plan to collect and analyze pertinent data for Army-wide use.

We are not making any recommendations on the pre-positioned fleets at NTC and JRTC since the Army is currently reviewing various alternatives to address the problems noted in this report and by others. Nevertheless, it is important that the Army promptly decide on a course of action to deal with these problems if units are to derive maximum benefits from their training at the centers.

## Agency Comments and Our Evaluation

In commenting on a draft of this report (see app. IV), DOD said that it generally concurred with our findings and recommendations. With respect to our recommendation to amend training exercise schedules so that time is allocated at the beginning of each training rotation for units to conduct internal training, DOD said the idea had merit and that it would review the balance and prioritization of training events at the centers to maximize training effectiveness. Although DOD did not elaborate on what such a review would entail, we believe that it is reasonable to expect that the review would compare the training needs identified during a unit's home station training and readiness evaluation in preparation for CTC training to the skills needed for units to successfully conduct battalion- and brigade-level exercises. It is also our expectation that the Army would consider alternatives for facilitating internal unit training after units arrive at the training centers. For example, there may be opportunities to streamline the activities presently conducted by units at the centers at the beginning and end of their force-on-force exercises. Alternatively, some force-on-force training could be sacrificed to allow time for initial internal training. Finally, on rare occasions, the centers might need to lengthen a rotation by a day or two. DOD also stated that the Forces Command

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commander has recently addressed this issue by requiring that units in the future pass mandatory training gates prior to a CTC rotation. Our report discusses this change but notes that, problems with unit training are likely to persist because the Army has not factored personnel shortages, turnover, and high operating tempo into this initiative.

With respect to our recommendation that the training centers provide the most realistic and challenging training conditions possible, incorporating the full spectrum of threats and enemy capabilities, DOD stated it has already started a comprehensive review of the opposing force and battlefield dynamics at the centers. According to DOD, the results of this review, which are expected in the fall of 1999 will form the basis for developing future CTC training scenarios that train units to counter the full spectrum of threats.

With regard to our recommendation to develop and implement a comprehensive data requirements and collection plan for the centers to provide the Army with data to improve training and doctrine, DOD stated it will, as we suggested, use the CTC Data Master Plan developed by the Army Combined Arms Center in 1995 as a basis for implementing such a system. DOD also noted implementation of a more effective data collection and analysis system for the centers is essential to the Army's renewed emphasis on identifying training deficiency trends and developing corrective actions.

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As agreed with your office, unless you publicly announce the contents of this report earlier, we will not distribute it until 30 days from the date of this letter. At that time, we will send copies of this report to interested congressional committees. We are also sending copies of this report to the Honorable William S. Cohen, Secretary of Defense and the Honorable Louis Caldera, Secretary of the Army. Copies will also be made available to others upon request.



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Key contacts and contributors on this assignment are listed in appendix V.

A handwritten signature in black ink, reading "Mark E. Gebicke". The signature is written in a cursive style with a large, stylized "M" and "G".

Mark E. Gebicke  
Director, National Security  
Preparedness Issues



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## Abbreviations

CAC	Combined Arms Center
CALL	Center for Army Lessons Learned
CMTC	Combat Maneuver Training Center
CTC	Combat Training Center
FMC	fully mission capable
JRTC	Joint Readiness Training Center
NTC	National Training Center
OPFOR	Opposing Force
OPTEMPO	Operating Tempo
OOTW	operations other than war
SORTS	Status of Resources and Training System
TRADOC	Training and Doctrine Command
T-RAP	TRADOC Remedial Action Program

# Factors Adversely Affecting Home Station Training as Reported by Units on Our Survey

**Table I.1: Battalion-level Training**

	Number of respondents
Personnel shortages	55
Personnel turnover	49
Overall operating tempo	45
Training ranges and maneuver space	32
Special duties and personnel taskings	29
Training money	26
Other	14
Equipment condition	6
Peacekeeping operations	4
Equipment shortages	2

**Table I.2: Company/Platoon-level Training**

	Number of respondents
Personnel shortages	61
Personnel turnover	54
Overall operating tempo	48
Special duties and personnel taskings	30
Training ranges and maneuver space	26
Training money	14
Other	11
Equipment condition	7
Peacekeeping operations	5
Equipment shortages	4

Notes: Based on responses from 96 battalions that trained at an Army Combat Training Center during fiscal year 1998.

Respondents identified multiple factors in their responses.

# Results of Our Survey on Army Combat Training Centers

In relation to your unit's wartime mission and the expected conditions and threat, how useful or relevant were the exercises at the combat training center (CTC) in each of the following areas?

	Very useful	Somewhat useful	Marginally useful	Not useful	No response
	Number of respondents				
Battalion-level proficiency in general	80	15	1	0	0
Company-level proficiency in general	81	15	0	0	0
METL proficiency for:					
- Combat arms units	65	7	5	3	16
- Combat support units	54	17	3	4	18
- Combat service support units	63	23	4	1	5
Individual proficiency for:					
- Combat arms soldiers	60	14	4	3	15
- Support soldiers	62	14	2	3	15
- Service support soldiers	76	17	2	0	1
Unit deployment procedures	55	31	9	1	0
Supply/maintenance procedures	56	33	5	1	1
Sustainment operation	65	28	2	1	0
Medical treatment and evacuation	60	27	9	0	0
Personnel replacement	27	37	21	11	0
Military operations in urban terrain	19	14	22	35	6
The handling of civilians on the battlefield	42	27	17	10	0
Responding to terrorist activities	22	26	26	19	3
Responding to chemical attack	39	38	11	6	2
Coordinating joint operations	9	25	22	33	7

Notes: Based on responses from 96 battalions that trained at an Army Combat Training Center during fiscal year 1998.

Respondents identified multiple factors in their responses.

**Appendix II**  
**Results of Our Survey on Army Combat**  
**Training Centers**

In relation to your unit's wartime mission, how would you describe the following aspects of CTC training in relation to improving the ability of your units and overall readiness?

	Very useful	Somewhat useful	Marginally useful	Not useful	No response
Number of respondents					
Deployment from home station to the CTC	50	34	10	1	1
Equipment draw procedures at the CTC	20	23	33	13	7
Force-on-force exercises	75	18	1	1	1
Live fire exercises	60	16	9	3	
After action reviews	61	25	9	1	0
CTC take-home materials for use at home station	31	34	23	7	1
Follow-on training conducted since return to home station	36	37	20	3	0

Considering the personnel turnover in your unit and training opportunities since the CTC rotation, how useful were the exercises in relation to determining training needs and assessing unit readiness at each of the following time intervals?

	Very useful	Somewhat useful	Marginally useful	Not useful	No response
Number of respondents					
Immediately upon return to home station	59	23	8	6	0
One month after return to home station	43	34	13	5	1
Two months after return to home station	34	37	19	4	2
Three months after return to home station	26	40	22	6	2
Now	25	30	29	11	1

# Objectives, Scope, and Methodology

The objectives of our review were to determine (1) whether units training at the Army Combat Training Centers are adequately prepared for the exercises; (2) whether training exercises are realistic in terms of expected battlefield conditions; (3) whether pre-positioned equipment adequately supports the training mission; (4) how units use lessons learned at the centers; and (5) how the Army uses the results of the exercises to help revise training and improve the Army's training doctrine. Our review focused on active component Army units.

An important tool for our review was a questionnaire sent to each commander of all 123 battalions that trained at one of the three Army Combat Training Centers in fiscal year 1998. We received complete responses from 104 (85 percent) of the units. Eight of these responses were unusable because the respondents were not with the unit when it trained at the center in 1998. We tabulated results from the remaining 96 valid responses for report purposes. The valid responses represent 40 units that trained at the National Training Center (NTC), 41 that trained at the Joint Readiness Training Center (JRTC), and 15 that trained at the Combat Maneuver Training Center (CMTC).

We also consulted with staff from the Army Inspector General's Office regarding their study of the Army's Combat Training Centers.

To determine whether units training at the centers are adequately prepared for the exercises, we visited all three Army combat training centers. At the centers, we interviewed key center officials from the command operations group, the opposing force commanders, and center observer/controllers. At each of the centers, we also spoke with and obtained information from unit commanders and personnel who were participating in exercises at each of the centers about their preparations for their rotation to a training center. We also visited the 2nd Brigade of the 3rd Infantry Division at Fort Stewart, Georgia, to obtain information from the command staff of five battalions that used the National Training Center in fiscal year 1998. Lastly, through the use of our questionnaire, we obtained information from 96 battalions regarding their experiences in preparing for a CTC rotation. We also obtained personnel information regarding the Army's on-board strength and operating tempo from various sources, including the Department of Defense's (DOD) quarterly readiness report. To determine whether training exercises are realistic in terms of expected battlefield conditions, we had discussions with the command operations group, opposing force commanders, and observer/controllers at each of the centers, and we observed unit training exercises at the combat training



centers. At each center the Army provided an experienced escort officer to ensure our understanding of mission objectives and actions taken by the training unit in response to the opposing force threat. We also visited the Army's Training and Doctrine Command (TRADOC) at Fort Monroe, Virginia, to determine the basis for the threats portrayed at the combat training centers; we interviewed responsible officials at TRADOC's Intelligence Directorate and reviewed appropriate documentation. We used data from our survey to obtain information from units that had trained at the centers about the scenarios and battlefield conditions portrayed at the centers. We also reviewed pertinent documentation from the Army's Forces Command.

To determine whether pre-positioned equipment adequately supports the training mission we reviewed pertinent documentation from the NTC and JRTC, observed equipment being issued, discussed equipment maintenance and age problems with appropriate officials at the training centers, compared equipment on-hand at the National Training Center with Army inventory records to determine the age of equipment at the center, and solicited information from unit commanders using our questionnaire. We also worked closely with officials from the Army's Inspector General's Office who reviewed equipment issues at the centers during the same time frame as our study.

To determine how units use lessons learned from the centers we reviewed after action reports to determine their organization and the specificity of their comments and recommendations, we attended after action reviews at the centers, and we solicited information from battalion commanders who completed our questionnaire. We also compared (1) personnel turnover in these units as well as their training to correct problems identified at the centers during the 3 months following CTC training and (2) the readiness reported by these unit commanders under the Status of Resources and Training System for the same 3-month period. We made this analysis to determine whether these factors were used to report readiness.

To determine how the Army uses results of training exercises to help revise training and improve doctrine, we performed work at Department of the Army Headquarters, Army Forces Command Headquarters, Army Training and Doctrine Command Headquarters, and Seventh Army Training Command Headquarters. At these locations, we interviewed responsible personnel and obtained existing Army regulations concerning Army assessment requirements and procedures. We also visited the Army's Combat Arms Center at Fort Leavenworth, Kansas. There we met with

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**Appendix III**  
**Objectives, Scope, and Methodology**

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responsible officials at the Center for Army Lessons Learned and obtained appropriate documentation.

We conducted our review from September 1998 to July 1999 in accordance with generally accepted government auditing standards.

# Comments From the Department of Defense



PERSONNEL AND  
READINESS

OFFICE OF THE UNDER SECRETARY OF DEFENSE  
4000 DEFENSE PENTAGON  
WASHINGTON, D.C. 20301-4000

September 1, 1999

Mr. Mark E. Gebicke  
Director  
National Security Preparedness Issues  
National Security and International Affairs Division  
U. S. General Accounting Office  
Washington, DC 20548

Dear Mr. Gebicke:

Attached is our response to the General Accounting Office (GAO) draft report, "MILITARY READINESS: Full Training Benefits From Army's Combat Training Centers Are Not Being Realized," dated July 30, 1999, (GAO Code 703250/OSD Case 1980). The department concurs generally with the findings and recommendation and appreciates the opportunity to comment on the recommendations contained in the report. Specific responses to the GAO's recommendations are attached.

Sincerely,

Thomas K. Longstreth  
Deputy Under Secretary of Defense  
(Readiness)

Enclosures: a/s



GAO DRAFT REPORT - GAO/NSIAD-99-210  
(GAO CODE 703250) OSD CASE 1870

"MILITARY READINESS: FULL TRAINING BENEFITS FROM ARMY'S  
COMBAT TRAINING CENTERS ARE NOT BEING REALIZED"

DEPARTMENT OF DEFENSE COMMENTS

**RECOMMENDATION:** The GAO recommended that the Secretary of the Army direct the Commanders of the Army Forces Command, the Army Training and Doctrine Command, and the Seventh Army Training Command to take the following actions to enhance the value of the Army's combat training centers to the Army and to units training at the centers.

**Part a:** Amend training exercise schedules at the centers so that time is allocated at the beginning of each training rotation for units to conduct a limited amount of internal unit training before the center's observers/controllers and OPFOR begin training with units. While this might lengthen the total training time by a few days, the gains in unit synchronization and execution skills and improved familiarization with equipment provided by the centers, can be expected to increase the training benefits to units and their leaders. (pp.32-33/GAO Draft Report)

**DOD RESPONSE: Concur**

The Army is committed to correcting the degradation in unit proficiency that has developed over the last few years. The Combat Maneuver Training Center (CMTC) routinely conducts five days of internal unit level training prior to beginning unit training with the observers/controllers and OPFOR in a force-on-force scenario. FOSCOM initiated mandatory training or "gates" prior to CTC rotations early in 1999, to improve unit proficiency before units deploy to CTCs. The particular limitations of the number of days available in the Reserve training year require special consideration for these units in order to continue their scheduled participation in the CTC experience. The Army reviews CTC rotational schedules and MACOM training plans to maximize unit proficiency prior to force-on force maneuver at CTCs. The review of CTC rotational schedules includes a validation of the balance and prioritization of rotational events to maximize effectiveness of the training experience at the CTCs. Any proposals will have to compete with other Army priorities for funding.

**Part b:** In accordance with Army Regulation 350-50, which stipulates that the centers will use the most realistic and challenging training conditions available, incorporate into the exercises at each combat training center the full spectrum of threats, opposing forces capabilities, and conditions that

units are likely to encounter in the future conflicts, especially ones that cannot be easily duplicated at home stations. Specific emphasis should be afforded to include operations in urban terrain, dealing with terrorists, operations with military forces from other countries, and activities involving civilians on the battlefield and interactions with media.  
(p.33/GAO Draft Report)

**DOD RESPONSE:** Concur

The Combat Training Centers will continue to provide the most realistic and relevant training experience short of actual combat. The Army is currently conducting a comprehensive review and assessment of the opposing forces and other battlefield dynamics to ensure that the training experience is relevant. It includes the areas of emphasis cited by GAO. This review will drive the direction of future CTC scenarios and how we train to counter full spectrum threats. TRADOC will bring an updated Vision for CTCs to Army leadership in the fall of 1999. Any proposals will necessarily have to compete with other Army priorities for funding.

**Part c.** Develop and implement a comprehensive data requirements and collection plan to enable center officials to systematically collect data that can be used to improve training and doctrine. This plan should include (a) an approach for linking centers by using compatible computer software so that Army-wide assessments can be made; (b) performance measures and the methodology to be used periodically assesses whether the centers are meeting their objectives; and (3) the specific information needed by research organizations, training and doctrine development commands, the centers, and units. The data collection plan developed by the Army Combined Army Center in 1995 would form a good basis for developing a current plan to collect and analyze pertinent data for Army-wide use.  
(p.33/GAO Draft Report)

**DOD RESPONSE:** Concur

The Army has renewed emphasis on Training Trends Reversal and Remedial Action Programs to correct training deficiencies. Refinement and implementation of the CTC Data Master Plan is essential to the continued success of this effort. The Army will use the CTC Data Master Plan developed by the Army Combined Arms Center in 1995 to form the basis for the data requirements and collection plan that will enable the Army to systematically collect data that can be used to improve training and doctrine. This proposal will have to compete with other Army priorities for funding.

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# GAO Contacts and Staff Acknowledgments

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## GAO Contacts

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## Acknowledgments

In addition to the contact named above, Ray S. Carroll Jr., Lester L. Ward, and Paul A. Gvoth Jr., made key contributions to this report.